1-7. (CANCELED)

8. (NEW) A method for controlling and regulating a transmission brake of an automatic transmission constructed with a countershaft, and having a transmission input shaft, with at least one countershaft driven by the transmission input shaft, and with a transmission output shaft, the method comprising the steps of:

supporting at least one of rotatably loose gears and non-rotatable fixed gears, which at least stand in a pair forming mesh grip with one another, on at least one of the transmission input shaft, the countershaft and the transmission output shaft;

non-rotatably binding loose gears with a transmission shaft for carrying out a gear change by a coupling apparatus as well as with a transmission brake, with which the countershaft, controlled by a control device, can be braked upon an upshift procedure in such a way that a speed of rotation thereof corresponds to an engagement point in time of a synchronous speed of rotation or approaches this condition up to a predetermined tolerance;

considering a brake rate of change of the speed of rotation of the transmission input as well as a rate of change of speed of rotation of the transmission output shaft for determination of a disengagement point in time of the transmission brake; and

disengaging the transmission brake, under consideration of a lead time, prior to the determined disengagement point in time.

9. (NEW) The method according to claim 8, further comprising the step of determining the lead time for the transmission brake inserted into the automatic transmission at least one of once individually and adaptively at predetermined time periods, or is determined by repeated adaptive computations of the lead time at each upshifting procedure.

10. (NEW) The method according to claim 8, further comprising the step of computing the lead time with consideration of a quality of a completed upshifting procedure, especially with consideration given to a synchronous run of rotating components of the transmission taking part in the shifting procedure.

11. (NEW) The method according to claim 10, further comprising the step of evaluating the quality of the completed upshifting procedure with criterion of achieving a predetermined targeted speed of rotation window (3) by a transmission input speed of rotation (1) because of the brake engagement, the upper speed of rotation of the

targeted speed of rotation window (3) lies under a set transmission input speed of rotation (2) following the upshift procedure.

12. (NEW) The method according to claim 8, further comprising the steps of keeping a value for a lead time for future upshifting procedures constant, if the engagement procedure is carried out while a transmission input speed of rotation (5) lies within a targeted speed of rotation window (3), and computing a new lead time if the engagement procedure is established by a transmission input speed of rotation (6; 7) which lies outside of the targeted speed of rotation window (3).

13. (NEW) The method according to claim 12, further comprising the step of extending the lead time for a next upshifting procedure for a predetermined time interval while the lead time is shortened for a predetermined time interval if the engagement procedure is carried out on the speed of rotation above the targeted speed of rotation window (3) under circumstances wherein the engagement procedure is carried out on the speed of rotation basis underneath the targeted speed of rotation window (3).

14. (NEW) The method according to claim 12, further comprising the step of determining a maximum speed of rotational rate of change (10) of a transmission input speed of rotation (1) for the computation of a new lead time during a running upshifting procedure and the speed of rotation difference (11) between the transmission input speed of rotation (8) is determined during the engagement procedure and a mid-point (9) of the targeted speed of rotation window (3) and by division of the speed of rotation difference (11) is determined by the maximal speed of rotation rate of change (10) of an altering value for the next upshifting procedure and by applying of the altering value, a new lead time for another upshifting procedure can be computed.